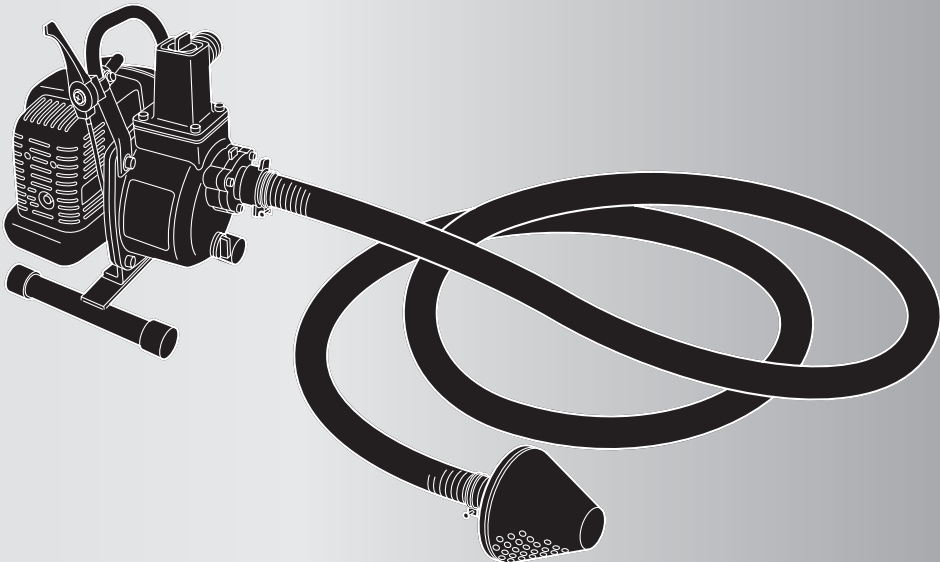





OWNER'S MANUAL

WATER PUMP



PE2300

⚠ WARNING ⚠

 Before using our products, please read this manual carefully to understand the proper use of your unit.

▲ SAFETY PRECAUTIONS

Warning labels bearing the ▲ mark on the product and in this Manual refer to important safety matters. Please familiarize yourself with them and observe them well.

If a warning label on the product becomes soiled or detached, please order a replacement label from your dealer and attach it in the requisite place.

PRECAUTIONS

In this Operator's Manual, precautions that are considered to be particularly important are indicated as follows.

WARNINGS IN THE MANUAL

▲ WARNING

Failure to observe the precaution may result in the risk of death or serious injury.

❗ IMPORTANT

Failure to observe the precaution may result in damage or malfunction of the product.

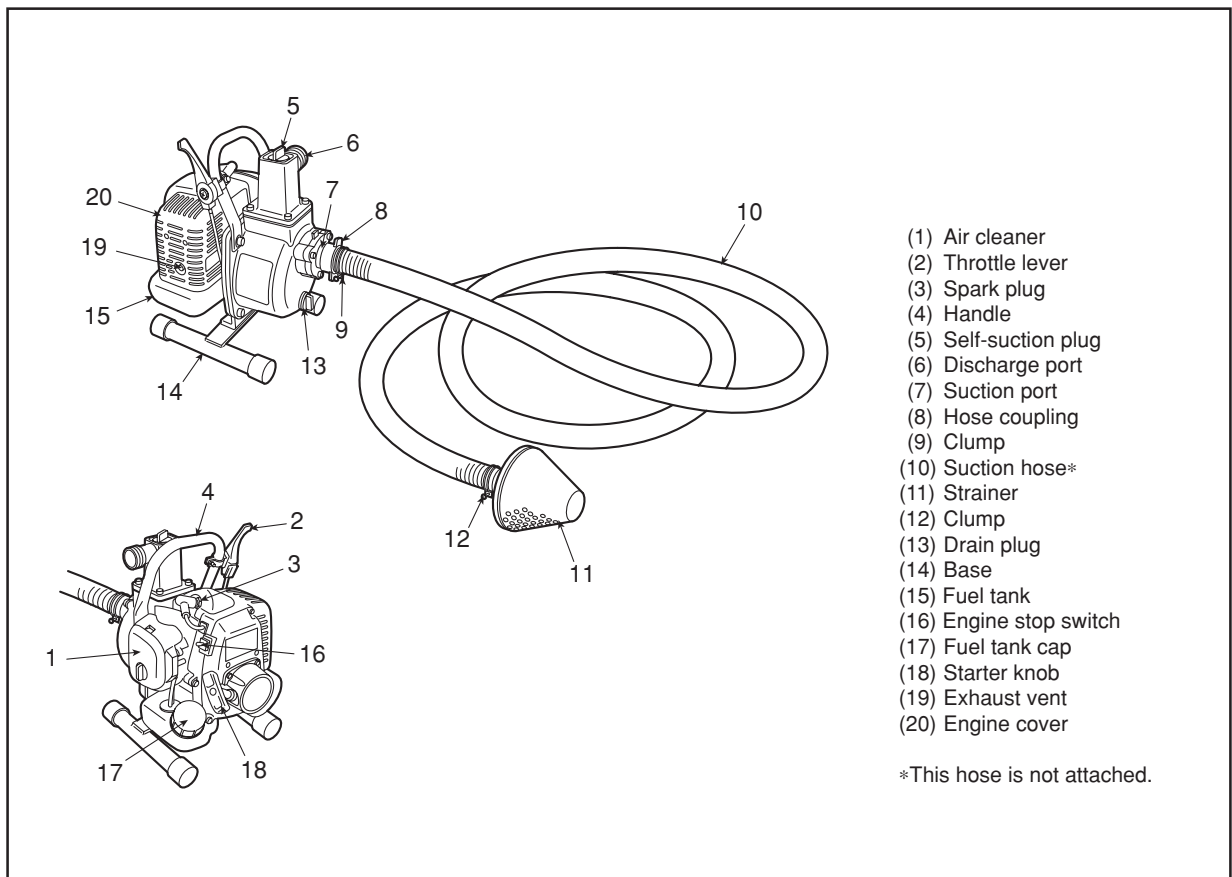
📖 NOTE

Other additional explanations that may be of use when operating the product.

Contents

| | |
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1. Parts location

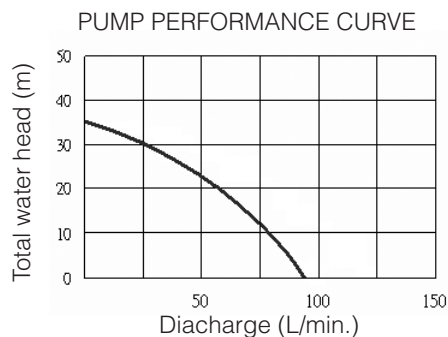


2. Specification

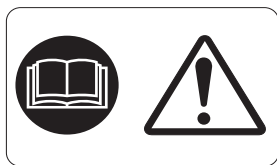
| Model name | | PE2300 | |
|---|--------------------------------------|---|---|
| Application | | Fresh water or agricultural water | |
| Dry weight * | (kg) | 4.7 | |
| External dimensions of main unit (length x width x height) * | | 288x221x321 (mm) | |
| Pump | Type | Self suction type volute pump | |
| | Suction/Discharge port diameter (mm) | 25 | |
| | Total water head | Discharge (m) | 35 |
| | | Suction (m) | 8 |
| | Discharge(Max) | (L/min) | 92 |
| | Max temperature for usage (°C) | | 75 |
| Engine | Type | Single-cylinder air-cooled 2-cycle gasoline engine | |
| | Model number | Zenoah G23LH | |
| | Exhaust capacity | (cc) | 22.5 |
| | Fuel used | | Lubricating oil/gasoline mix |
| | Fuel tank capacity | (L) | 0.5 |
| | Lubricating oil used | | 2-cycle engine oil |
| | Admixture ratio | | Gasoline 50 : Oil 1 (when using ZENOAH genuine oil) |
| | Carburetor | | Diaphragm, rotary valve type |
| | Ignition system | | Electronic controlled flywheel magnet type |
| | Spark plugs | | CHAMPION CJ-6Y |
| | Starter system | | Recoil starter type |
| | Stopping system | | Primary cable short circuit |
| | Air cleaner | | Dry type |
| Standard accessories | | 1 plug wrench, 1 Strainer, 2 hose coupling, 3 clump | |

* When accessories is not attached.

Due to product improvements, these specifications are subject to change without notice.



3. Symbols in the manual



(1)

(2)

- (1) Read owner's manual before operating this machine.
 (2) Warning / Attention



Never modify your machine.

We won't warrant the machine, if you use the remodeled pump or if you don't observe the proper usage written in the manual.

4. Symbols on the machine

For safe operation and maintenance, symbols are carved in relief on the machine. According to these indications, please be careful not to make a mistake.



The port to refuel the "MIX GASOLINE"
Position: FUEL TANK CAP



The direction to close the choke
Position: AIR CLEANER COVER



The direction to open the choke
Position: AIR CLEANER COVER

▲ 5. For safe operation

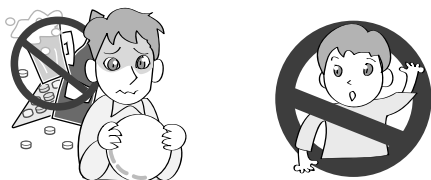
Before using this product, please read this Operator's Manual thoroughly to ensure correct operation. The following are precautions that should be observed in order to use the product smoothly. Elsewhere in the Manual, the ▲ warning mark is used to bring your attention to these precautions.



BEFORE USING THE PRODUCT

- Do not apply this pump for other than fresh water or agricultural water.
- Those cannot be applied are Drinking Water, Muddy Water, Sea Water, Flammable Fluids (Such as Kerosene, Diesel Oil, Gasoline, or Heavy Oil), Chemical Agents, Acid or Alkaline Fluids, etc.

Do not use this product when tired or otherwise in poor physical condition, or when you may be unable to judge correctly or operate accurately, such as after taking cold relief medicines or drinking alcohol. Also, children or persons who are unable to understand the contents of this Manual should under no circumstances be permitted to use the product.



- The engine exhaust gas contains toxic carbon monoxide. Please do not use the product indoors, in vinyl houses or tunnels, or in other poorly ventilated places.



- Do not use this product in the following cases.
 1. When the product could fall over or in other situations when it is difficult to hold or operate.
 2. After sunset or at other times when eyesight is poor and the safety of the operation area is difficult to ascertain.
 3. In worsening weather (rain, fog, strong wind, lightning, etc.)



- When using for the first time, before commencing actual operating please receive guidance in operating the product from a person with adequate experience.
- Please take good care of this Operator's Manual and refer to it for additional information from time to time.
- When selling or lending this product, it should be accompanied by this Operator's Manual.



▲ WARNING

- To avoid noise complaints, in general, operate product between 8 a.m. and 5 p.m. on weekdays and 9 a.m. to 5 p.m. on weekends.

ⓘ IMPORTANT

Check and follow the local regulations as to sound level and hours of operations for the product.

PRECAUTIONS BEFORE OPERATING

- Apply isolation measures to keep children or infants away from the pump so that you can operate it in safe area.
- Temperature of the pumping up water shall be in between 5°C to 75°C. Otherwise, the pump may be damaged.
- Avoid idle pump operation (operation with no water in the pump). This may cause pump damage.
- Be sure to use only suction hose or an equivalent "water suction hose" as a water inlet hose.
- Make sure to couplings and clumps (attached to this kit) when connecting the suction and discharge hoses to the pump.
- Do not place any flammable object such as straw, withered leaves, rubbish, oily wiping cloth, etc. around the pump in operation.

PRECAUTIONS WHEN TRANSPORTING THE PUMP

- The engine shall be stopped to transfer pump.
- Do not transport the pump while it has fuel in the tank, as these could leak out as a result of impact during transportation.
- When transporting in a vehicle, please use a rope or similar to fix the pump firmly to the cargo trailer in an upright position. Please do not transport by bicycle or motorbike, as this is dangerous.

▲ 5. For safe operation

PRECAUTIONS CONCERNING FUEL

- The engine of this product is fueled by "mixed gasoline" that includes highly combustible fuel. Do not refuel or store fuel containers where there is any risk of combustion from incinerators, burners, bonfires, kitchen stoves, electric sparks, welding sparks, etc.



- Smoking while operating or refueling is dangerous. Please avoid this at all costs.
- When refueling during use, always stop the engine and make sure there are no naked flames in the vicinity before refilling.
- Any fuel spilt during refueling should be wiped off completely with a rag or similar before starting the engine.
- After refueling, seal the fuel container, tightly close the fuel tank cap, and start the engine at least 3 meters away.

PRECAUTION WHEN STARTING THE ENGINE

- Please keep children, animals, etc. well away when starting the engine and operating.



- Do not touch the spark plugs or plug cords while the engine is running, as you may get an electric shock.



- Do not touch the muffler, spark plugs, or other metal parts with your bare hands while the engine is running or immediately after stopping the engine, as there is the risk of burns due to high temperatures.



MAINTENANCE PRECAUTIONS

- In order to maintain the functions of the product, regularly carry out the maintenance inspections listed in this Manual. When maintenance or parts replacement not indicated in this Manual are required, please consult your product supplier or nearest ZENOAH product dealer.
- Never keep the engine running while carrying out inspections or maintenance.
- Do not modify the pump or dismantle the engine. This could lead to breakdown and serious accidents during operation.
- Do not touch the muffler or spark plugs with your bare hands immediately after stopping the engine. There is the risk of burns due to high temperature.



- For replacement parts, please use original ZENOAH parts or brands designated by ZENOAH.

MAINTENANCE OF LABELS

1. Please keep warning labels clean and unmarked.
2. If warning labels become soiled or peel off, please order from your supplier and replace with new ones.
3. When affixing new labels please wipe off all dirt and moisture.

6. Set up

❗ IMPORTANT

- As a suction hose, be sure to use suction hose (nominal diameter 25mm) or an equivalent 'water suction hose' only.
 - Securely connect hoses with attached hose couplings and clumps.
 - If the suction hose connection is loose, or a packing in hose coupling has been lost or damaged, air may be sucked into the pump and interrupt water suction (air lock).
 - A strainer shall be placed so that it does not appear above water level nor suck bottom sand and mud.
1. Place your pump at nearby water resource horizontally.
 2. Insert hose couplings to the suction hose and discharge hose and tighten them with clumps.
 3. After checking the packing of each hose coupling, connect the suction hose to a suction port and the discharge hose to a discharge port.

7. Fuel

■ FUEL

⚠ WARNING

- **Gasoline is very flammable. Avoid smoking or bringing any flame or sparks near fuel. Make sure to stop the engine and allow it cool before refueling the unit. Select outdoor bare ground for fueling and move at least 3 m (10 ft) away from the fueling point before starting the engine.**



- The Zenoah engines are lubricated by oil specially formulated for air-cooled 2-cycle gasoline engine use. If Zenoah oil is not available, use an anti-oxidant added quality oil expressly labeled for air-cooled 2-cycle engine use (JASO FC GRADE OIL or ISO EGC GRADE).
- Do not use BIA or TCW (2-stroke water-cooling type) mixed oil.

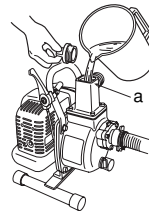


- **RECOMMENDED MIXING RATIO**
GASOLINE 50 : OIL 1
(when using ZENOAH genuine oil)

📖 NOTE

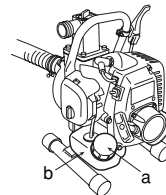
Discharge port angle can be changed to 3 different directions. Adjust to your operating condition.

4. Submerge the suction hose strainer in the water.
5. Lay the discharge hose where necessary. Arrange protective covers if the hose can be disturbed by foot steps of others.
6. Remove self-suction plug and top up the pump with water.



a. Self-suction port

7. Fill up fuel tank with fuel and tighten the tank cap securely.



a. cap
b. fuel tank

- **Exhaust emission are controlled by the fundamental engine parameters and components (eq., carburation, ignition timing and port timing) without addition of any major hardware or the introduction of an inert material during combustion.**
- These engines are certified to operate on unleaded gasoline.
- Make sure to use gasoline with a minimum octane number of 89RON (USA/Canada: 87AL).
- If you use a gasoline of a lower octane value than prescribed, there is a danger that the engine temperature may rise and an engine problem such as piston seizing may consequently occur.
- Unleaded gasoline is recommended to reduce the contamination of the air for the sake of your health and the environment.
- Poor quality gasolines or oils may damage sealing rings, fuel lines or fuel tank of the engine.

■ HOW TO MIX FUEL

⚠ WARNING

- Pay attention to agitation.
1. Measure out the quantities of gasoline and oil to be mixed.
 2. Put some of the gasoline into a clean, approved fuel container.
 3. Pour in all of the oil and agitate well.
 4. Pour in the rest of gasoline and agitate again for at least one minute. As some oils may be difficult to agitate depending on oil ingredients, sufficient agitation is necessary for the engine to last long. Be careful that, if the agitation is insufficient, there is an increased danger of early piston seizing due to abnormally lean mixture.

7. Fuel

- Put a clear indication on the outside of the container to avoid mixing up with gasoline or other containers.
- Indicate the contents on outside of container for easy identification.

■ FUELING THE UNIT

- Untwist and remove the fuel cap. Rest the cap on a dustless place.
- Put fuel into the fuel tank to 80% of the full capacity.
- Fasten the fuel cap securely and wipe up any fuel spillage around the unit.

▲ WARNING

- Select bare ground for fueling.
- Move at least 3 meters (10 feet) away from the fueling point before starting the engine.
- Stop the engine before refueling the unit. At that time, be sure to sufficiently agitate the mixed gasoline in the container.

■ FOR YOUR ENGINE LIFE, AVOID:

- FUEL WITH NO OIL (RAW GASOLINE)** – It will cause severe damage to the internal engine parts very quickly.

- GASOHOL** – It can cause deterioration of rubber and/ or plastic parts and disruption of engine lubrication.
- OIL FOR 4-CYCLE ENGINE USE** – It can cause spark plug fouling, exhaust port blocking, or piston ring sticking.
- Mixed fuels which have been left unused for a period of one month or more may clog the carburetor and result in the engine failing to operate properly.
- In the case of storing the product for a long period of time, clean the fuel tank after rendering it empty. Next, activate the engine and empty the carburetor of the composite fuel.
- In the case of scrapping the used mixed oil container, scrap it only at an authorized repository site.

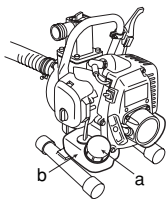
📖 NOTE

- As for details of quality assurance, read the description in the section Limited Warranty carefully. Moreover, normal wear and change in product with no functional influence are not covered by the warranty. Also, be careful that, if the usage in the instruction manual is not observed as to the mixed gasoline, etc. described therein, it may not be covered by the warranty.

8. Operation

▲ WARNING

- Highly combustible. When refueling, switch the engine off and keep well away from naked flames.**
- After filling the tank with fuel, firmly tighten the cap.**



a. cap
b. fuel tank

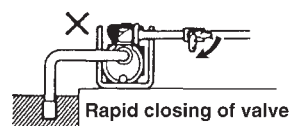
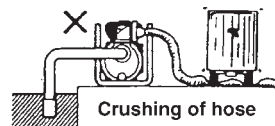
▲ WARNING

- Before starting the engine, check if there is anything that must not be wet near the discharge hose tip. Give warning to nearby people of starting water discharge.

ⓘ IMPORTANT

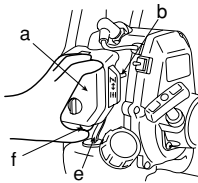
- Idle operation with no water in the pump may cause pump damage. Before starting the engine, check if the pump is filled with self-suction(priming) water. In case the suction strainer comes out of the water level during operation, immediately reduce the engine speed and stop the operation.

- Confirm that the suction hose connection is not too loose. Loose connection may result in no suction water.
- In case the discharge hose is clogged or a valve connected to the discharge hose is closed, the pump may not suck water.
- Stepping on the discharge hose or sudden closure of the discharge valve may create instantaneous high pressure in the pump and result in pump damage(Water Hammer Effect). Arrange protective covers if the hose can be disturbed by others stepping on, and avoid closing the valve rapidly.



8. Operation

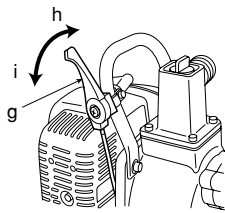
1. Press the primer at the bottom of the carburetor a few times with your finger until the fuel starts to flow through the transparent pipe.



- a. air cleaner
- b. choke lever
- c. close
- d. open
- e. transparent pipe
- f. primer

NOTE

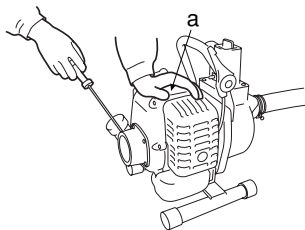
- There is no need to operate the primer when restarting immediately after stopping the engine, provided there is fuel left in the fuel tank.
2. Lift the choke lever on the right of the air cleaner until it is in the "closed" position, then open the throttle lever on the main unit side about 1/3-1/2 from the "slow" position.



- g. throttle lever
- h. fast
- i. slow

NOTE

- When restarting immediately after stopping the engine, set the choke lever to "open" and the throttle lever to "slow".
3. Confirm that the machine is stable on the ground. While holding the engine cover with your left hand, pull the starter knob with right hand. Starter knob shall be initially pulled gently, then vigorously when you feel resistance.



a. engine cover

IMPORTANT

- Do not pull the rope out completely or release the knob so that the rope returns, as this can cause starter malfunction.
4. Once the engine has started, gradually open the choke, warm up at low speed for 1-2 minutes, then return the throttle lever to the "slow" position.

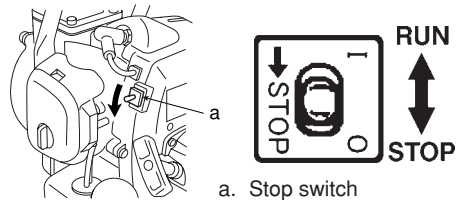
IMPORTANT

- If the rope is pulled continuously with the choke closed, the spark plugs may become flooded and the engine may fail to start. If so, you should first remove the spark plugs and dry the electrodes, then repeat the starting procedure.
5. Operate the engine at a half throttle until the water in suction hose reaches the pump. As water discharge is started, adjust the throttle according to your required flow rate within the capacity.

Stopping engine

WARNING

- Stop the engine immediately in the event of an emergency.
1. Lower the throttle lever fully and cool the engine down for 1-2 minutes at low speed.
 2. Shift the engine stop switch to the STOP position.



a. Stop switch

IMPORTANT

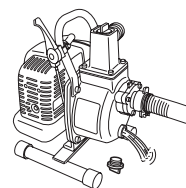
- Except for an emergency, avoid stopping the engine while pulling the throttle trigger.
- If the water resource tank becomes empty while operating, reduce the engine to low speed immediately. Empty running of the engine may cause the pump to break.

AFTER USE

1. Release a drain plug at lower part of the pump and drain the water out of the pump.
2. Disconnect the hoses, clean them for storage.

IMPORTANT

- During cold climate, be sure to drain the pump after every use. At an ambient temperature below freezing point, the water in the pump casing may freeze and damage the pump.



Disposal

When disposing your machine, fuel or oil for the machine, be sure to allow your local regulations.

9. Maintenance

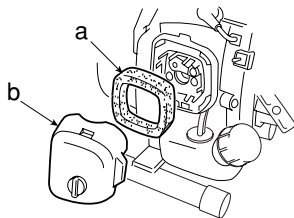
| | System/components | Procedure | Before use | Every 25 hours after | Every 50 hours after | Every 100 hours after | Note |
|--------|--|-----------------------------|------------|----------------------|----------------------|-----------------------|---|
| ENGINE | fuel leaks, fuel spillage | wipe out | ✓ | | | | |
| | fuel tank, air filter, fuel filter | inspect/clean | ✓ | ✓ | | | replace, if necessary |
| | idle speed adjuster | see adjusting idling speed | ✓ | | | | replace carburetor if necessary |
| | spark plug | clean and readjust plug gap | | | ✓ | | GAP: 0.6 to 0.7 mm (.025 in) replace, if necessary |
| | cylinder fins, intake air cooling vent | clean | | ✓ | | | |
| | muffler, cylinder exhaust port | clean | | | | ✓ | |
| | throttle lever, stop switch | check operation | ✓ | | | | |
| | screws/nuts/bolts | tighten/replace | ✓ | | | ✓ | except adjusting screws |

▲ WARNING

- Make sure that the engine has stopped and is cool before performing any service to the machine. Contact with hot muffler may result in a personal injury.
- Do not modify the pump or dismantle the engine.
- When replacing parts please use Zenoah original parts or designated parts.

■ Air cleaner

- After every 25 hours of operation, please remove the air cleaner cover and inspect the element. If it is too dirty, wash it carefully in warm water containing a neutral detergent, and return it to its original position after drying it thoroughly.
- If the element is distorted or damaged, please replace it with a new one.



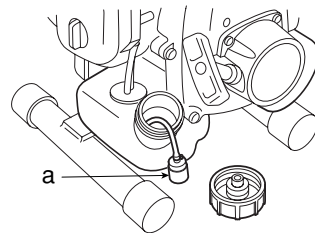
- a. Element
b. Air cleaner cover

ⓘ IMPORTANT

- If the air cleaner element is blocked, the efficiency of the engine will be reduced. In addition, the engine interior will suffer abnormal wear if operated without the element or if continually operated with a distorted or damaged element fitted.

■ Fuel filter

After every 25 hours of operation, empty the fuel tank, detach the fuel filter from the tank, and remove all dirt. If the filter is too clogged, please replace it with a new one.



a. Fuel filter

ⓘ IMPORTANT

- If the fuel filter is clogged, the engine speed may be limited or speed fluctuations may occur.
- If the engine is operated without a fuel filter, dirt will accumulate in the carburetor and cause it to malfunction.

■ Spark plug

▲ WARNING

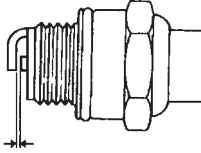
- Do not touch the spark plug with your bare hands immediately after operation, as there is the risk of burns due to high temperature.



- After every 50 hours of operation, detach the spark plug and remove dirt from the electrodes with a wire brush or similar.
- The correct electrode gap is 0.6 to 0.7mm.

9. Maintenance

- When replacing plugs, please use designated items.



0.6~0.7mm

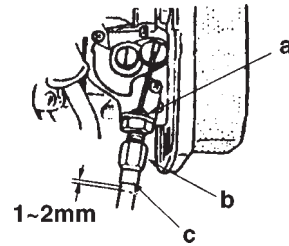
CHAMPION CJ-6Y

NOTE

- Warm up the engine before adjusting the idling speed.

Throttle wire play

Throttle wire play should be 1 to 2 mm. After completely returning the throttle lever, take the throttle wire at the carburetor end in your fingers and give a light tug. If the play is too great or too small, readjust the position of the wire retaining nut. Loosen the lock nut and turn the wire retaining nut clockwise (screw in) to increase the play and counter-clockwise (unscrew) to reduce it. After adjusting, please fasten the wire retaining nut by tightening the lock nut.



- a. lock nut
- b. wire retaining nut
- c. wire sleeve

IMPORTANT

- If too much fuel is absorbed or poor quality oil is used, the spark plug electrodes become dirty, making the engine harder to start.
- Note that using any spark plug other than those designated may result in the engine failing to operate properly or in the engine becoming overheated and damaged.
- To install the spark plug, first turn the plug until it is finger tight, then tighten it a quarter turn more with a socket wrench.

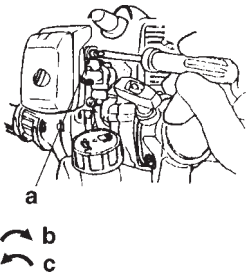
TIGHTENING TORQUE: 14.7 to 21.6 N.m.
(150 to 220 kgf-cm)

Adjusting the engine

Although the engine is adjusted on leaving the factory, after repeated use it may sometimes require readjustment or maintenance. Please consult your original supplier regarding inspections and maintenance other than those shown below.

Idling speed

If the engine stalls due to too low engine speed when fully returning the throttle lever or if you feel it to be too high, adjust the speed. Idle adjusting screw is on the upper part of the carburetor.



- a. idle speed adjuster
- b. increase speed
- c. reduce speed

Turn the idling adjustment screw:

- counter-clockwise to reduce engine speed
- clockwise to increase engine speed

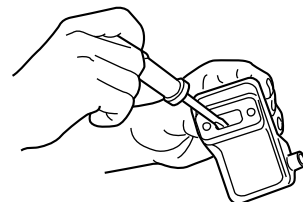
MUFFLER

WARNING

- **Inspect periodically, the muffler for loose fasteners, any damage or corrosion. If any sign of exhaust leakage is found, stop using the machine and have it repaired immediately.**
- **Note that failing to do so may result in the engine catching on fire.**

PROCEDURES TO BE PERFORMED AFTER EVERY 100 HOURS OF USE

1. Remove the muffler, insert a screwdriver into the vent, and wipe away any carbon buildup. Wipe away any carbon buildup on the muffler exhaust vent and cylinder exhaust port at the same time.
2. Tighten all screws, bolts, and fittings.
3. Check to see if any oil or grease has worked its way in between the clutch lining and drum, and if it has, wipe it away using oil-free, lead-free gasoline.



9. Maintenance

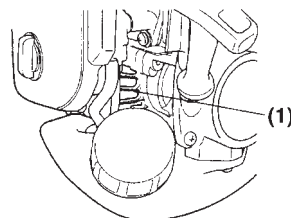
INTAKE AIR COOLING VENT

ⓘ IMPORTANT

⚠ WARNING

- Never touch the cylinder, muffler, or spark plugs with your bare hands immediately after stopping the engine. The engine can become very hot when in operation, and doing so could result in severe burns.
- When checking the machine to make sure that it is okay before using it, check the area around the muffler and remove any wood chips or leaves which have attached themselves to the brushcutter. Failing to do so could cause the muffler to become overheated and that in turn could cause the engine to catch on fire. Always make sure that the muffler is clean and free of wood chips, leaves, and other waste before use.
- Check the intake air cooling vent and the area around the cylinder cooling fins after every 25 hours of use for blockage. Note that it is necessary to remove the upper cover and the lower cover in order to be able to view the upper part of the cylinder.

- If waste gets stuck and causes blockage around the intake air cooling vent or between the cylinder fins, it may cause the engine to overheat, and that in turn may cause mechanical failure on the part of the brushcutter.



(1) Intake air cooling vent

10. Storage

⚠ WARNING

- When draining fuel, please be careful not to spill it. If fuel is spilt, wipe off thoroughly. In addition, please be sure to close the storage container cap tightly.

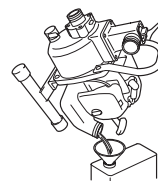
ⓘ IMPORTANT

- If fuel is left in the engine for protracted periods, the inside of the carburetor may become clogged and cause engine malfunction (faulty starting and insufficient output).
- During storage, slightly loosen the cap of the fuel tank. If screwed too tightly, the gasket may become distorted.

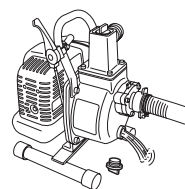
On completion of all work procedures, when not planning to use again for a protracted period please carry out the following pre-storage care, to prevent trouble caused by time-lapse changes.

1. Remove dirt from the pump, inspect it for any damage or looseness, and, if any abnormality is found, correct it thoroughly in preparation for the next time you use the unit.

2. Drain the fuel tank and fill the pump with water



3. Start the engine, and leave it in idling condition until all the fuel inside the carburetor is spent and the engine comes to a natural stop.
4. Remove the spark plug and put a few drops (1 to 2 cc) of 2-cycle oil inside the engine. After pulling the starter rope 2 or 3 times, return the spark plugs to their original position and stop in compressed position.
5. Drain water from the pump completely, and wipe off water on the pump using dry cloth.



6. After oiling the throttle lever and other metal parts with anti-corrosive oil, cover the pump and store indoors in a low-humidity location.

11. Disposal

When disposing your machine, fuel or oil for the machine, be sure to allow your local regulations.

12. Troubleshooting guide

Case 1. Starting failure

| CHECK | PROBABLE CAUSES | ACTION |
|-----------------------------|---|---|
| fuel tank | → incorrect fuel | → drain it and use correct fuel |
| fuel filter | → fuel filter is clogged | → clean |
| carburetor adjustment screw | → out of normal range | → adjust to normal range |
| sparkign (no spark) | → spark plug is fouled/wet → plug gap is incorrect | → clean/dry → correct (GAP: 0.6 to 0.7 mm) |
| spark plug | → disconnected | → retighten |

Case 2. Engine starts but does not keep running/hard re-starting

| CHECK | PROBABLE CAUSES | ACTION |
|----------------------------------|---------------------------------|---------------------------------|
| fuel tank | → incorrect fuel or staled fuel | → drain it and use correct fuel |
| carburetor adjustment screw | → out of normal range | → adjust to normal range |
| muffler, cylinder (exhaust port) | → carbon is built-up | → wipe away |
| air cleaner | → clogged with dust | → wash |
| cylinder fin, fan cover | → clogged with dust | → clean |

Case 3. No suction of water

| CHECK | PROBABLE CAUSES | ACTION |
|-------------------|---|--|
| self-suction port | → insufficient self-sucking water in pump | → top up with water(see Page 7) |
| hose, clump | → loose connection of suction hose | → tighten securely not to suck air |
| packing | → faulty packing in suction hose connection | → replace with proper one(ask for service) |
| hose | → suction hose crack breakage | → replace with proper one |
| hose, valve | → folded discharge hose, closed valve | → extend and stretch hose, open valve |

Case 4. Discharge water flow rate too small

| CHECK | PROBABLE CAUSES | ACTION |
|----------------|---|--|
| strainer | → clogged suction strainer | → cleaning of suction strainer |
| pump position | → pump position too high from water level | → lowering pump height to water level |
| water resource | → too far or too high place to discharge | → secure water resource near to discharge place |
| fuel | → engine output too low | → check fuel degrading, water ingress. Replace if needed (see Page 7) |
| air filter | | check air filter clogging, cleaning (see Page 9) |
| fuel filter | | check fuel filter clogging, cleaning (see Page 9) |
| carburetor | | carburetor adjustment |
| suction side | → air invasion at suction side | → check piping at suction side |
| hose | → thin or long or kink of hose | → thicken or shorten or straighten |
| water resource | → leak of water from water resource | → stop leak |

Case 5. Water leakage from pump

| CHECK | PROBABLE CAUSES | ACTION |
|-------|-------------------------|-----------------------|
| bolts | → Loosen assembly bolts | → Tightening of bolts |

When your unit seems to need further service, please consult with our ZENOAH service shop in your area.

Limited warranty

Should any failure occur on the product under normal operating conditions within the applicable warranty period, the failed part will be replaced or repaired free of charge by a ZENOAH authorized dealer.

WARRANTY PERIOD: 1 year (6 months if used professionally, and 30 days if used for rental purpose) from the date of initial purchase.

THE PURCHASER SHALL BEAR COSTS OF TRANSPORTING THE UNIT TO AND FROM THE ZENOAH DEALER.

THE PURCHASER SHALL NOT BE CHARGED FOR DIAGNOSTIC LABOR WHICH LEADS TO THE DETERMINATION THAT A WARRANTED PART IS DEFECTIVE, IF THE DIAGNOSTIC WORK IS PERFORMED AT THE ZENOAH DEALER.

THE PURCHASER OR OWNER IS RESPONSIBLE FOR THE PERFORMANCE OF THE REQUIRED MAINTENANCE AS DEFINED BY THE MANUFACTURER IN THE OWNER/OPERATOR MANUAL.

ANY WARRANTED PART WHICH IS NOT SCHEDULED FOR REPLACEMENT AS REQUIRED MAINTENANCE, OR WHICH IS SCHEDULED ONLY FOR REGULAR INSPECTION TO THE EFFECT OF REPAIR OR "REPLACE AS NECESSARY" SHALL BE WARRANTED FOR THE WARRANTY PERIOD. ANY WARRANTED PART WHICH IS SCHEDULED FOR REPLACEMENT AS REQUIRED MAINTENANCE SHALL BE WARRANTED FOR THE PERIOD OF TIME UP TO THE FIRST SCHEDULED REPLACEMENT POINT FOR THE PART.

ANY REPLACEMENT PART THAT IS EQUIVALENT IN PERFORMANCE AND DURABILITY MAY BE USED IN NON-WARRANTY MAINTENANCE OR REPAIRS, AND SHALL

NOT REDUCE THE WARRANTY OBLIGATION OF THE COMPANY.

THE COMPANY IS LIABLE FOR DAMAGES TO OTHER ENGINE COMPONENTS CAUSED BY THE FAILURE OF A WARRANTED PARTS STILL UNDER WARRANTY.

THE WARRANTY DOES NOT APPLY TO THOSE UNITS WHICH HAVE BEEN DAMAGED BY NEGLIGENCE OF INSTRUCTION LISTED IN THE OWNER/OPERATOR MANUAL FOR PROPER USE AND MAINTENANCE OF THE UNITS ACCIDENT MISHANDLING, ALTERATION, ABUSE, IMPROPER LUBRICATION, USE OF ANY PARTS OR ACCESSORIES OTHER THAN THOSE SPECIFIED BY THE COMPANY, OR OTHER CAUSES BEYOND THE COMPANY'S CONTROL.

THIS WARRANTY DOES NOT COVER THOSE PARTS REPLACED BY NORMAL WEAR OR HARMLESS CHANGES IN THEIR APPEARANCE.

THERE ARE NO OTHER EXPRESS WARRANTIES.

IMPLIED WARRANTIES INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE **ARE LIMITED** TO TWO (2) YEARS OF HOME USE [ONE (1) YEAR FOR ANY OTHER USE] FROM THE ORIGINAL DELIVERY DATE.

LIABILITIES FOR INCIDENTAL OR CONSEQUENTIAL DAMAGE UNDER ANY AND ALL WARRANTIES ARE EXCLUDED.

IF YOU NEED TO OBTAIN MORE INFORMATION, PLEASE CALL YOUR NEAREST SERVICE CENTER, OR CHECK PLEASE ZENOAH WEB SITE <http://www.zenoah.net>